



Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 825-3811

CNSS048300

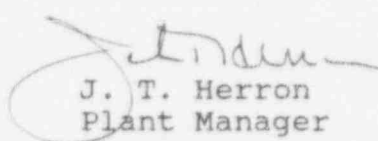
October 19, 1994

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

Cooper Nuclear Station Licensee Event Report 94-006, Rev. 1, is forwarded as an attachment to this letter.

Sincerely,


J. T. Herron
Plant Manager

JTH/nc

Attachment

cc: L. J. Callan
G. R. Horn
J. H. Mueller
R. G. Jones
R. A. Sessoms
R. E. Wilbur
D. A. Whitman
INPO Records Center
NRC Resident Inspector
R. J. Singer
CNS Training
CNS Quality Assurance

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PDR ADOCK 05000294
S PDR

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)
COOPER NUCLEAR STATIONDOCKET NUMBER (2)
05000298PAGE (3)
1 OF 5

TITLE (4) Inoperable Control Room Emergency Filter System

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	11	94	94	-- 006 --	01	10	19	94	FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		100	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
			20.405(a)(1)(i)		50.36(c)(1)		X 50.73(a)(2)(v)		73.71(c)	
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER	
			20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in	
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		Abstract below	
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		and in Text, NRC Form 366A)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
John R. Myers	(402) 825-3811

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 11, 1994, the Control Room Emergency Filter System failed post maintenance testing for planned maintenance of a door comprising part of the Control Room pressurization boundary. During the following 7 days, door seals were adjusted or replaced and smoke tests performed to identify leaks in the Control Room envelope, and repairs implemented. Although system performance was improved, acceptance criteria still could not be met. Enforcement discretion was granted by the NRC providing a 14 day extension to restore the Control Room Emergency Filter System operability. A significant number of additional leaks in conduits and cable trays were repaired. Post maintenance testing was completed satisfactorily and the Control Room Emergency Filter System was declared operable on April 30, 1994 at 2:52 pm.

The direct cause of this event was inadequate design of the system, resulting in a system with marginal capacity. The original system design criteria was inadequately defined, and subsequent opportunities to correct the condition were missed. Surveillance procedures have been revised to provide more conservative acceptance criteria, and a modification will be implemented to increase ventilation flow and pressurization margin.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
COOPER NUCLEAR STATION	05000298	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
		94	-- 006 --	01	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

A. Event Description

On April 11, 1994, the Control Room Emergency Filter System was declared inoperable at 1:47 pm for planned maintenance of the latch on door H300, which is part of the Control Room pressurization boundary. Maintenance on the door latch required the door to be open, thus rendering the system incapable of performing its safety function. Technical Specification 3.12.A LCO was entered, which allows continued plant operation for 7 days with the system out of service. Upon completion of maintenance, Surveillance Procedure (SP) 6.3.17.18, Control Room Envelope Pressurization Test, was performed to verify capability of the ventilation system to maintain the Control Room envelope at a pressure greater than atmospheric pressure. The acceptance criteria could not be met with the Emergency Filter System in operation.

During the following 7 days, door seals were adjusted or replaced and local smoke tests were performed to identify leaks in the Control Room envelope. In addition to door seals, leaks were found and repaired in conduits and cable tray seals. These efforts improved the results of the surveillance test in that the system could maintain positive pressure in the Control Room with respect to adjacent buildings. However, the system could not maintain positive pressure in the Control Room with respect to atmosphere when the Turbine Building ventilation system was running at its normal pressure of -0.25 in. wg with respect to atmosphere. When the non-safety related Turbine Building ventilation system was operated at -0.05 in. wg pressure, the system was able to maintain positive pressure in the Control Room envelope with respect to all adjacent buildings and outside atmosphere.

Enforcement discretion was granted by the NRC providing a 14 day extension to the LCO requirement to allow additional time to restore the system to operable status. The basis for this extension was the ability of the system to maintain positive pressure with the Turbine Building ventilation system operating at -0.05 in. wg. Compensatory actions were taken to comply with the requirements of the Notice of Enforcement Discretion (NOED).

During the period allowed for by the NOED, a systematic approach was developed to smoke test potential leak paths in the Control Room envelope. A significant number of additional leaks were discovered in conduits and cable trays. Special sealing equipment and services were procured to assist in sealing irregular equipment configurations.

A Special Test Procedure (STP) evaluated the possible interaction between the Control Room envelope and the plant buildings that share common boundaries. The results showed that, upon completion of the sealing efforts, the system was capable

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

A. Event Description (continued)

of maintaining the Control Room envelope at a positive pressure with respect to all adjacent plant buildings and the outside atmosphere under all design basis accident bounding conditions.

Surveillance Procedure 6.3.17.18 was subsequently passed on April 28, 1994, and the Control Room Emergency Filter System was declared operable on April 30, 1994 at 2:52 pm.

On June 23, 1994, while reviewing information related to the Control Room envelope pressurization issue, a statement in FSAR Amendment 25 (June 8, 1973) was identified which indicated the system should maintain a pressure of +0.25 in. wg to mitigate the consequences of a steam line break. Based on not being able to satisfy this requirement, the Control Room Emergency Filter System was declared inoperable at 5:15 p.m. A further review of the design basis has concluded the requirements in this Amendment should have been revised based upon subsequent design changes to the system, and there is no requirement for the system to maintain +0.25 in. wg.

B. Plant Status

The plant was in normal power operation at approximately 100 percent power at the time of this event.

C. Basis for Report

The inability of the Control Room Emergency Filter System to perform its required function is reportable as a condition that could have prevented the fulfillment of a safety function of a system needed to mitigate the consequences of an accident, reportable in accordance with 10CFR50.73(a)(2)(v). Investigation into past testing indicates that the ventilation controls for adjacent buildings were sometimes inappropriately adjusted, thus the system may not have always been capable of fulfilling design requirements to maintain positive pressure in the Control Room envelope.

D. Cause

The original system design criteria was not well defined, and the system was not originally intended to provide pressurization. Subsequent opportunities to correct the condition during system design and performance reviews were missed, as a result of the lack of a well defined design basis, inadequate testing, a compliance based approach, and failure to implement adequate corrective action although the pressurization test results were marginal. As a result, the system has inadequate capacity.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

E. Safety Significance

The Control Room Emergency Filter System, a single train safety system, is designed to protect personnel in the Control Room from excessive radiation exposure in the event of a Design Basis Accident. During operation of the system in the emergency mode, incoming air to the Control Room is filtered by high efficiency particulate air (HEPA) filters and by charcoal adsorbers. The system is designed to automatically start and alarm if airborne radioactivity is detected in the Control Room air intake to reduce the radiological exposure to Control Room personnel. Under design conditions, the system will maintain a positive Control Room envelope pressure relative to the adjacent buildings and outside atmosphere to minimize unfiltered leakage to the Control Room envelope during an accident. Calculations have shown that even with substantial infiltration, GDC 19 dose limits would not have been exceeded.

F. Safety Implications

The effect of the loss of Control Room pressurization is most significant should a Design Basis Accident occur during power operation. As such, there are no safety implications beyond those discussed in Section E above.

G. Corrective Action

Door seals in the Control Room envelope were repaired, penetrations were sealed, and the adjacent building ventilation control systems inspected and repaired. Recent testing has consistently achieved results in the range of +0.04 to +0.05 in. wg.

An operability limit of +0.03 in. wg with respect to adjacent buildings and the atmosphere for the Control Room envelope has been established, together with an administrative limit +0.04 in. wg. Surveillance testing to these limits will be conducted monthly. In the event the administrative limit is not met, test frequency will be increased to once every two weeks.

The Control Room Emergency Filter System will be modified to increase the ventilation flow and pressurization margin. Upon implementation, the operability and administrative limits will be increased.

As previously communicated, the schedule for design basis reconstitution efforts has been accelerated. Surveillance test procedures have been reviewed, and further reviews are planned as part of the design basis reconstitution effort.

To improve safety attitudes and performance, training in safety principles and performance-based evaluation techniques will be provided to appropriate staff starting in September 1994. Additional root cause analysis and investigation training will also be provided.

LICENSING EVENT REPORT (LER)

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H. Similar Events

LER 93-011, Secondary Containment Surveillance Methodology Failed to Identify Leakage Path Between Secondary Containment and the Radwaste Building, discusses the inability to achieve the required differential pressure during a pre-refueling surveillance test. This condition was ascribed to an inadequate procedure, which was viewed as an isolated incident.